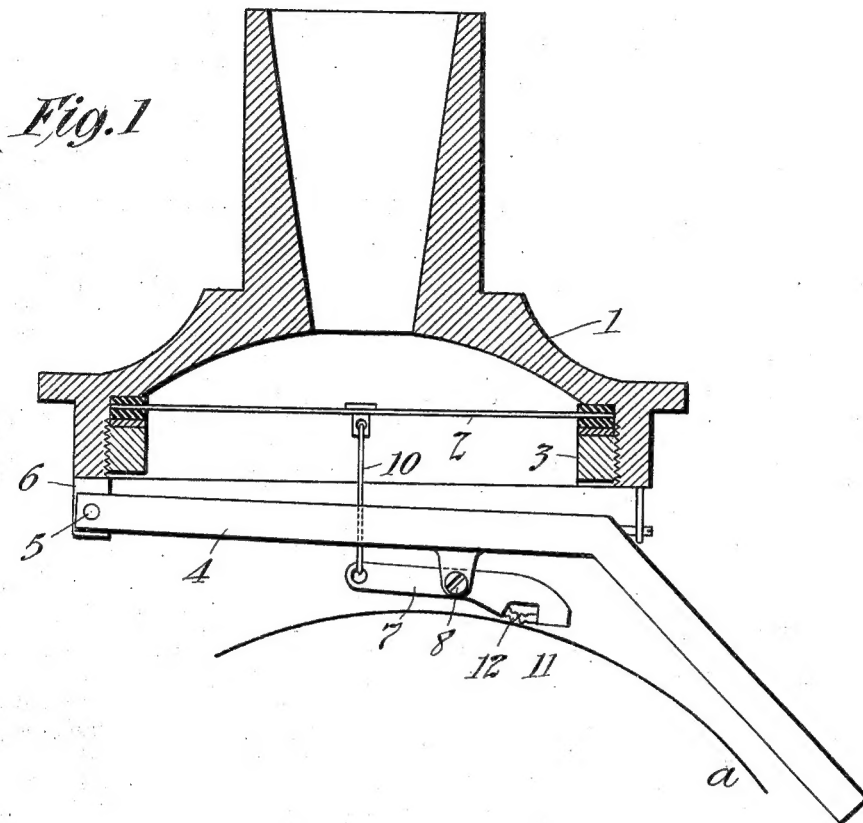


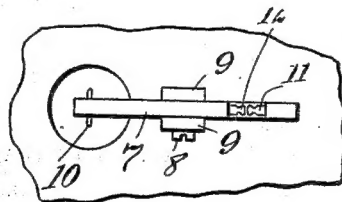
T. A. EDISON.  
 PHONOGRAPH REPRODUCER.  
 APPLICATION FILED JUNE 11, 1908.

1,019,440.

Patented Mar. 5, 1912.



*Fig. 2*



*Witnesses:*

*Frank Owen*  
*Herbert H. Dyke*

*Inventor:*

*Thomas A. Edison*  
*by Frank L. Dyer*  
*Atty.*

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, ORANGE, NEW JERSEY, ASSIGNOR TO  
THOMAS A. EDISON, INCORPORATED, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## PHONOGRAPH-REPRODUCER.

1,019,440.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed June 11, 1908. Serial No. 437,843.

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, a citizen of the United States, and a resident of Llewellyn Park, Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Phonograph-Reproducers, of which the following is a description.

My invention relates to reproducers for phonographs and more particularly to that type which is adapted to operate upon a sound record in the form of a groove having elevations and depressions corresponding to the original sound waves.

The object of my invention is to secure a louder and more perfect reproduction than can be obtained from the ordinary form of reproducer, or to secure a reproduction of equal loudness with less wear upon the record. With this end in view I employ a pair of reproducer styluses, one of which is arranged slightly in advance of the other with respect to the record groove, so that both styluses track the same groove together, and although the one stylus is slightly in advance it does not interfere with the other because of the elongated character of the record groove. In other words, each sound or note which is recorded on the record consists of so many elevations and depressions that the two styluses are operated practically simultaneously with respect to the record of each individual sound, however minute.

Reference is hereby made to the accompanying drawing, of which—

Figure 1 is a side elevation, partly in section, of a phonograph reproducer constructed in accordance with my invention, and Fig. 2 is a bottom plan view of the stylus lever, styluses and a portion of the floating weight.

The reproducer shown comprises a sound box body 1 of ordinary form, within which the diaphragm 2 is clamped by the ring 3 in the usual manner. The floating weight 4 is pivoted at 5 to the block 6 carried by the body 1, and the stylus lever 7 is pivoted on the screw 8 carried by the lugs 9 which

depend from the weight 4. One end of the lever 7 is connected by the link 10 to the center of the diaphragm 2, and the other end of the lever is provided with a pair of sockets which receive the reproducer styluses 11 and 12, the former being slightly in advance of the latter with respect to the groove of the sound record *a*. These styluses may be of any form adapted to track the said groove, but I have shown and prefer to use styluses of the type known as button-balls, as fully set forth in my patent reissue No. 11,857, dated September 25, 1900.

Having now described my invention, what I claim is:

1. In a phonograph reproducer, the combination with a vibratory member, of a pair of reproducing styluses adapted to coact with a sound record, means for supporting said styluses in position to track the same groove of a sound record, said styluses being positioned sufficiently closely together to be operated in the reproduction of the record substantially simultaneously by the same note recorded on the record, but not to interfere with each other, and means for transferring the vibrations of said styluses to said vibratory member, substantially as described.

2. In a phonograph reproducer, the combination with a vibratory member, of a stylus lever connected to said member and a pair of reproducing styluses carried by said lever, adapted to coact with a sound record and track the same groove, said styluses being supported with their operative surfaces located in substantially the same plane parallel to the grooves of said sound record when the reproducer and record are in operative position and in substantially the same plane tangent to said record, substantially as described.

3. In a phonograph reproducer, the combination with a vibratory member, of a floating weight, a stylus lever carried by said weight and connected to said member and a pair of styluses carried by said lever, adapted to coact with a sound record, said styluses

being supported with their operative surfaces located in substantially the same plane parallel to the grooves of said sound record when the reproducer and record are in operative position and in substantially the same plane tangent to said record, substantially as described.

This specification signed and witnessed this 8th day of June 1908.

THOS. A. EDISON.

Witnesses:

FRANK L. DYER,

FRANK D. LEWIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."